

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 84-8

NPDES PERMIT NO. CA0005240

WASTE DISCHARGE REQUIREMENTS FOR:

CALIFORNIA AND HAWAIIAN SUGAR COMPANY
CROCKETT, CONTRA COSTA COUNTY

AND

CROCKETT-VALONA SANITARY DISTRICT
CROCKETT, CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter Board), finds that:

1. California and Hawaiian Sugar Company (hereinafter C&H) filed a Report of Waste Discharge dated September 2, 1982 and provided additional information in letters dated July 27, 1983 and September 12, 1983. Crockett-Valona Sanitary District (hereinafter District) by letter dated August 29, 1983 concurred in the joint application filed by C&H. The Report of Waste Discharge covers the C&H cane sugar refinery, the District's sewerage system and the plant that treats and disposes of the combined waste.
2. C&H and the District (hereinafter Dischargers) entered into a Joint-use Agreement for the Dischargers' treatment plant on November 9, 1976.
3. The District is responsible for collecting and handling sewage within its sewer system. Sewage is comminuted and degritted before the District pumps it to the Dischargers' treatment plant. All the grit thus removed is hauled to a permitted Class II disposal site.
4. C&H is responsible for waste discharged at its sugar refinery and solid waste disposal site, and for operation of the Dischargers' treatment plant and outfall.
5. The Board adopted Order No. 78-93 prescribing waste discharge requirements for the Dischargers on November 21, 1978.
6. C&H is discharging industrial and sanitary wastes containing pollutants into Carquinez Strait and an unnamed tidal stream tributary thereto, both waters of the United States, as follows:

a. Waste 001

Consists of 27.4 million gallons per day (mgd) of once-through cooling water used in barometric condensers on vacuum pans and evaporators and in stream turbine heat exchangers. It also includes brine and rinse water from zeolite units and boiler blowdown water, and is discharged through a diffuser at the bottom of Carquinez Strait which extends to approximately 200 feet offshore at a depth of 47 feet.

b. Waste 002

Consists of 1.2 mgd of effluent from the biological treatment of process waste from the C&H sugar refinery and domestic waste from the District. The treated effluent is discharged through a 47 foot deep submerged outfall and diffuser to Carquinez Strait, 637 feet from shore directly below the Carquinez Bridge.

c. Waste 003

Consists of 0.02 mgd of boiler house waste including seal and cooling waters from pump glands, fan bearings, air compressor and silica reactor. Some of Waste 001 may be diverted through a valved connection to Waste 003 for pH adjustment provided compliance with the temperature requirement is maintained. Wastes 003 through 009 are shallow water discharges.

d. Waste 004

Consists of about 100 gallons per day of water from the refinery rail car scale pit which accumulates from rinsing the exterior of rail cars carrying bulk granulated sugar. This waste also includes some storm water run-off from the refinery yard.

e. Waste 005

Consists of about 100 gallons per day of wastewater effluent from an oil separator at a steam cleaning wash rack. This waste also includes some storm water from the refinery yard.

f. Waste 007

Consists of about 100 gallons per day of wastewater from the truckloading station and includes water from hydraulic operators, loading spout washing, scale pit drainage and some run-off.

g. Waste 008

Principally stormwater from the refinery yard but includes a small quantity of water from the steam cleaning rack.

h. Waste 009

Consists of effluent from the oil separator on the drains from the raw sugar dock. These drains discharge primarily stormwater.

i. Waste W

Approximately 30 tons (dry weight) per day of solid industrial wastes containing principally waste filter aid with some char dust, inorganic salts and a small quantity of organic matter and

4-5 tons (dry weight) per day of dewatered sludge from the biological treatment plant. This waste is discharged onto Land Disposal Site "L-1" on the ridge dividing the watershed of Canada del Cierbo from that of an unnamed tributary of Rodeo Creek. (See Attachment A).

7. C&H is exempt from the requirements 5.A(1)a and 5.A(2) of the State Thermal Plan (Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California) based upon State Water Resources Control Board Resolution 75-72 issued July 17, 1975 and the U.S Environmental Protection Agency's concurrence by letter of September 2, 1975.
8. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on July 21, 1982.
9. The beneficial uses of Carquinez Strait and contiguous waters are:
 - a. Water contact and non-contact recreation;
 - b. Fish migration and spawning;
 - c. Estuarine habitat;
 - d. Wildlife habitat;
 - e. Preservation of rare and endangered species;
 - f. Commercial and sport fishing;
 - g. Navigation; and
 - h. Industrial service supply.
10. Effluent limitation and toxic effluent standards established pursuant to Sections 208(b), 301, 304, and 307 of the Clean Water Act are applicable to the discharge.
11. This project is exempt from the provisions of Chapter 3 (commencing with Section 21000) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.
12. The Board has notified the Dischargers and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
13. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code and regulations adopted thereunder, and to the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, that the Dischargers shall comply with the following:

A. Prohibitions

1. The discharge of wastes 001 and 002 at any point in waters of the United States at which the wastes do not receive an initial dilution of at least 10:1 is prohibited.

2. The maximum combined flow rate of Wastes 001 and 002 shall not exceed 40 mgd.
3. The average dry weather flow of Waste 002 shall not exceed 1.78 mgd. Average shall be determined over three consecutive months each year.
4. There shall be no bypass or overflow of untreated wastewater to waters of the United States either at the treatment plant or from the sewage collection system.
5. The disposal of Group 1 wastes at Land Disposal Site "L-1" is prohibited.

B. Effluent Limitations

1. Effluent discharge shall not exceed the following total mass emission rates:

- a. Total mass emission rate of BOD₅ contributed by Wastes 001*, 002, 003, 004, 005 and 007 shall be determined by summing the calculated industrial effluent guideline limits for C&H with the calculated municipal limits for the District as follows:

Limit	=	C&H	+ District
Limit (30-day average lbs/day)	=	3700	+ 30 mg/l x District flow (mgd) x 8.34
Limit (30-day average kg/d)	=	1700	+ 30 mg/l x District flow (mgd) x 3.79
Limit (daily max. lbs/day)	=	10,000	+ 60 (mg/l) x District flow (mgd) x 8.34
Limit (daily max. kg/d)	=	4600	+ 60 (mg/l) x District flow (mgd) x 3.79

- b. Total mass emission rate of Total Suspended Solids contributed by Wastes 002, 003, 004, 005, and 007 shall be determined by summing the calculated industrial effluent guideline limits for C&H with the calculated municipal limits for the District as follows:

Limit	=	C&H	+ District
Limit(30-day average lbs/d)	=	770	+ 30 (mg/l) x District flow (mgd) x 8.34
Limit (30-day average kg/d)	=	350	+ 30 (mg/l) x District flow (mgd) x 3.79
Limit (daily max. lbs/d)	=	2300	+ 60 (mg/l) x District Flow (mgd) x 8.34
Limit (daily max. kg/d)	=	1,000	+ 60 (mg/l) x District flow (mgd) x 3.79

*BOD value for this waste shall be based on incremental increase of BOD above that present in the intake water.

2. The discharge of an effluent containing oil and grease in excess of the following limits is prohibited:

<u>Waste</u>	<u>Units</u>	<u>30-Day Average</u>	<u>Maximum Daily</u>
a. Waste 002	mg/l	10	20
b. Waste 003	mg/l	10	20
c. Waste 004	mg/l	10	20
d. Waste 005	mg/l	10	20
e. Waste 007	mg/l	10	20
f. Waste 008	mg/l	10	20
g. Waste 009	mg/l	10	20

3. The wastes 001 and 002 shall not have a pH of less than 6.0 nor greater than 9.0.
4. The wastes 003, 004, 005, 007, 008, and 009 shall not have pH of less than 6.5 nor greater than 8.5.
5. In any representative set of samples, waste 002 shall meet the following limit of toxicity: the survival of test fishes in 96-hour bioassays of the effluent as discharged shall be a 90 percentile value of not less than 50 percent survival.
6. In any representative set of samples, waste 003 as discharged shall meet the following limit of toxicity: the survival of test fishes in 96-hour bioassays of the effluent as discharged shall achieve a median of 90% survival for three consecutive samples and a 90 percentile value of not less than 70% survival for 10 consecutive samples.
7. The discharge of waste 002 shall not contain a chlorine residual of greater than 0.0 mg/l.
8. Representative samples of Waste 002 shall not exceed the following limits:

<u>Constituent</u>	<u>Unit of Measurement</u>	<u>6-Month Median</u>	<u>Daily Maximum</u>
Arsenic	mg/l	0.01	0.02
Cadmium	mg/l	0.02	0.03
Total Chromium	mg/l	0.005	0.01
Copper	mg/l	0.2	0.3
Lead	mg/l	0.1	0.2
Mercury	mg/l	0.001	0.002
Nickel	mg/l	0.1	0.2
Silver	mg/l	0.02	0.04
Zinc	mg/l	0.3	0.5
Cyanide	mg/l	0.1	0.2
Phenolic Compounds	mg/l	0.5	1.0
Total Identifi- able Chlorinated Hydrocarbons	mg/l	0.002	0.004

Total Identifiable Chlorinated Hydrocarbons shall be measured by summing the individual concentrations of DDT, DDD, DDE, aldrin, BHC, chlordane, endrin, heptachlor, lindane, dieldrin, polychlorinated biphenyls, and other identifiable chlorinated hydrocarbons.

9. The total coliform bacteria of Waste 002 for a median of five consecutive effluent samples shall not exceed 240 MPN per 100 milliliters. Any single sample shall not exceed 10,000 MPN Per 100 ml when verified by a repeat sample taken within 48 hours.

C. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:
 - a. Floating, suspended, or deposited macroscopic particulate matter or foam;
 - b. Bottom deposits or aquatic growths;
 - c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
 - d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;
 - e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.
2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

a. Dissolved oxygen	7.0 mg/l minimum. When natural factors cause lesser concentration(s) than that specified above, then this discharge shall not cause further reduction in the concentration of dissolved oxygen,
b. Dissolved Sulfide	0.1 mg/l maximum.
c. pH	Variation from natural ambient pH by more than 0.5 pH units,
d. Un-ionized Ammonia as N	0.025 mg/l Annual Median 0.4 mg/l Maximum

3. Elevated temperature waste discharges either individually or combined with other discharges shall not create a zone, defined by water temperatures of more than 1° above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of Carquinez Strait at any point.
4. No discharge shall cause a surface water temperature rise greater than 4°F above the natural temperature of the receiving waters at any time or place.
5. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

D. Provisions

1. Neither the treatment nor the discharge of pollutants shall create a nuisance as defined in the California Water Code.
2. The discharge of Waste "W" shall not cause waste material to be in any position where it is, or can be, carried from Land Disposal Site "L-1" and deposited into waters of the State.
3. Land Disposal Site "L-1" shall have facilities adequate to divert surface runoff from adjacent area, to protect boundaries of the site from erosion, and to prevent any conditions that would cause drainage from the materials in the disposal site. Adequate protection is defined as protection from a 24-hour rainfall event with an intensity such that the probability of recurrence of a 24-hour rainfall event with equal intensity is 1% (100-year, 24-hour rainfall event). The calculation of such a rainfall intensity shall be based on a statistical analysis of available precipitation records for the location of Site "L-1".
4. Where concentration limitations in mg/l are contained in this permit, the following mass emission limitations shall also apply as follows:

$$\text{Mass Emission Limit in lbs/day} = \text{Concentration Limit in mg/l} \times 8.34 \times \text{Actual Flow in mgd Averaged Over the Time Interval to which the Limit Applies.}$$
5. The Dischargers will comply with all items of the attached "Standard Provisions and Reporting Requirements," dated April 1977.
6. Order No. 78-93 is rescinded.

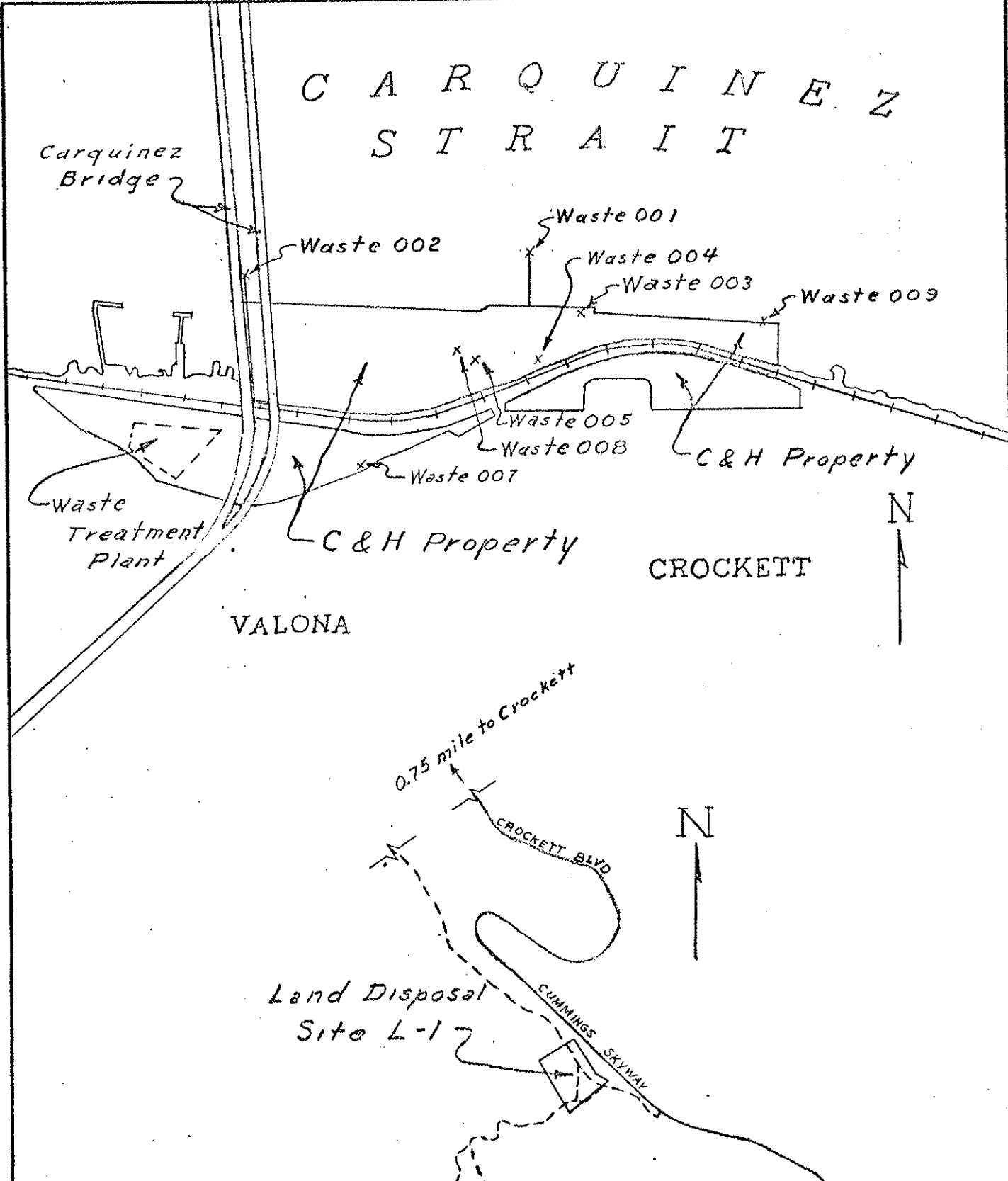
7. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act and shall become effective 10 days after date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.
8. This Order expires on February 15, 1989, and the Dischargers must file a Report of Waste Discharge in accordance with Title 23, California Administrative Code, not later than 180 days in advance of such date as application for issuance of new waste discharge requirements.
9. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Dischargers, the Dischargers shall notify the succeeding owner or operator of the existence of this Order by a letter, a copy of which shall be forwarded to this Board.

I, Roger B. James, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on March 21, 1984.

ROGER B. JAMES
Executive Officer

Attachments:

Attachment A
Standard Provisions and Reporting
Requirements dated April 1977
Self-Monitoring Program



STATE OF CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SAN FRANCISCO BAY REGION		
Attachment A C & H Sugar Co. & Crockett- Valona Sanitary District		
DRAWN BY: JHM	DATE: 8-24-83	DRWG. NO. 1

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

T E N T A T I V E
SELF-MONITORING PROGRAM
FOR

California and Hawaiian Sugar Company

and Crockett-Valona Sanitary District

Crockett, Contra Costa County

NPDES NO. CA 0005240

ORDER NO. 84-8

CONSISTS OF

PART A, dated January 1978

AND

PART B

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INTAKE

<u>Station</u>	<u>Description</u>
I-1	At any point in the salt water intake system prior to any usage of intake water.
I-2	At any point in the wastewater conveyance system from Crockett-Valona Sanitary District to the C&H - District Treatment Plant where flow measurements are representative of the flow rates of wastewater delivered by Crockett-Valona Sanitary District.
I-3	At any point in the wastewater conveyance system where the flow measurements are representative of the flow rates of Waste 001 diverted for discharge as part of Waste 003.

B. EFFLUENT

<u>Station</u>	<u>Description</u>
E-001	At any point in the Waste 001 outfall between the point of discharge and the point at which all waste tributary to that outfall is present.
E-002	At any point in the Waste 002 outfall between the point of discharge and the point at which all fully treated waste tributary to that outfall is present.
E-002-D	At a point in the disinfection facilities at which adequate contact with the disinfectant has been achieved.
E-003	At any point in the Waste 003 outfall between the point of discharge and the point at which all waste tributary to that outfall is present.
E-004	A point located at the discharge side of the pump which is periodically used to dewater the rail car weight pit. Samples should not be collected from the weight pit itself.

E-005	At any point in the Waste 005 outfall between the point of discharge and the point at which all waste tributary to that outfall is present.
E-007	At any point in the Waste 007 outfall between the point of discharge and the point at which all waste tributary to that outfall is present.
E-008	At any point in the Waste 008 outfall between the point of discharge and the point at which all waste tributary to that outfall is present.
E-009	At any point in the Waste 009 outfall between the point of discharge and the point at which all waste tributary to that outfall is present.

C. RECEIVING WATERS

<u>Station</u>	<u>Description</u>
C-10	At a point in Carquinez Strait, located in the boil caused by Waste 001.
C-30	At a point in Carquinez Strait located at the edge of the wharf at the intersection of a line extended northerly from the outfall for Waste 003.
C-RE	At a point in Carquinez Strait, located at the edge of the wharf at its easterly end.
C-RW	At a point in Carquinez Strait, located at the edge of the wharf at its westerly end.

D. LAND OBSERVATIONS

<u>Station</u>	<u>Description</u>
L-1 thru L-n	Located along the perimeter levee of Land Disposal Site "L-1", at equidistant intervals not to exceed 100 feet. (A sketch showing the locations of these stations will accompany each annual report described in Section F.4. of Part A.)

II. SCHEDULE OF SAMPLING AND ANALYSIS

- A. The schedule of sampling, measurements and analysis shall be that given as Table I.
- B. Because the plant operates on a 10 days on and 4 days down 14 day cycle, samples should be collected in a well-ordered pattern, as defined below. Day 1 will be the first day of the 10 days on, with day 14 being the last day of the 4 days shutdown.

<u>Sampling frequency</u>	<u>Day(s) to be sampled</u>
D	1,2,3,4,5,6,7,8,9,10,11,12,13,14
5/W	1,2,3,4,5,6,7,8,9,10
2/W	2,4,7,9
W	2,7
2W	2
2/M	2
M	2
3M	2

III. MODIFICATIONS OF PART "A" DATED JANUARY, 1978

- A. Exclusions: Paragraphs C.3., C.4., C.5.c., C.5.d(1), C.5.d.(4), D.4.b., and F.3.g.(2).
- B. Modifications:
1. Paragraph D.1.a.: Replace "varying days selected at random" with "days coincident with composite sampling of effluent."
 2. Paragraph D.3.b.: Replace "during the period" with "within 1 hour," and replace "during higher slack water period" with "within 1 hour of higher slack water."
 3. Paragraph F.3.: Replace "The reports shall be comprised of the following:" with "Except as noted, the reports shall be comprised of the following:"
 4. Paragraph F.3.c.: Replace "the report" with "the first report following the effective date of the Self-Monitoring Program, and each annual report (described in Paragraph F.4. below)."
 5. Paragraph F.3.f: Add before subparagraphs (1) and (2), "The following lists shall be submitted with the first report following the effective date of the Self-Monitoring Programs, and with each annual report."
 6. Paragraph F.4.: Replace "both tabular and graphical" with "tabular."

7. All prior self-monitoring programs for California Hawaiian Sugar Company and Crockett-Valona Sanitary District are rescinded.

I, Roger B. James, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No.
2. Is effective on the date shown below.
3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer.

ROGER B. JAMES
Executive Officer

Effective Date March 21, 1984

Attachment:

Table I
Footnotes and Legend for Table I
Chlorine Residual - Form A

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

[illegible]

[illegible][illegible]

TABLE 1
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	I-1	I-2	I-3	E-001		E-002		E-002 D	E-003		E-004	E-005
TYPE OF SAMPLE	C-24	Cont		C-24	G	C-24	G	G	C-24	G	G	G
Flow Rate (mgd)	D	D	(2)	D		D			W		(2)	(2)
BOD, 5-day, 20°C, (mg/l & kg/day)	2/W			2/W		W			W		M	(4)
Chlorine Residual & Dos- age (mg/l & kg/day) (5)						cont or 2H						
Settleable Matter (ml/1-hr. & cu. ft./day)							W					
Total Suspended Matter (mg/l & kg/day)						W			W		M	(4)
Oil and Grease (mg/l & kg/day)						(1) W			(1) W			(4) Q
Coliform (Total or Fecal) (MPN/100 ml) per req't								3 D/W				
Fish Tox'y 96-hr. TL ₅₀ %Surv'l in undiluted waste							M			Q		
Ammonia Nitrogen (mg/l & kg/day)												
Nitrate Nitrogen (mg/l & kg/day)												
Nitrite Nitrogen (mg/l & kg/day)												
Total Organic Nitrogen (mg/l & kg/day)												
Total Phosphate (mg/l & kg/day)												
Turbidity (Jackson Turbidity Units)												
pH (units)					5/W		cont			cont	M	(4) Q
Dissolved Oxygen (mg/l and % Saturation)												
Temperature (°C)					5/W					W		
Apparent Color (color units)												
Secchi Disc (inches)												
Sulfides (if DO<5.0 mg/l) Total & Dissolved (mg/l)												
Arsenic (mg/l & kg/day)						(6) Y						
Cadmium (mg/l & kg/day)						(6) Y						
Chromium, Total (mg/l & kg/day)						(6) Y						
Copper (mg/l & kg/day)						(6) Y						
Cyanide (mg/l & kg/day)						(6) Y						
Silver (mg/l & kg/day)						(6) Y						
Lead (mg/l & kg/day)						(6) Y						

[illegible]

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

[illegible]

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample
C-24 = composite sample - 24-hour
O = observation
Cont = continuous

FREQUENCY OF SAMPLING

E = each occurrence
D = once each day
W = once each week
M = once each month
5 D/W = 5 days per week
3 D/W = 3 days per week
2 D/W = 2 days per week
Q = every 3 months
Y = once a year

TYPES OF STATIONS

I = intake and/or water supply stations and Waste 001 diversion station
E = waste effluent stations
C = receiving water stations
L = basin and/or pond levee stations

FOOTNOTES

1. Separately collect and analyze at 8 hour intervals three grab samples for oil and grease on each sampling day. Report the arithmetic average of these as the value for that day, and use it to calculate the kg/day discharge rate. Alternately, the samples may be combined for analysis if their volume is proportional to flow rate at time collected within $\pm 5\%$ and if the samples and their containers are handled in accordance with the procedures of Standard Methods for oil and grease samples. This means that glass container used for sample collection or mixing shall be thoroughly rinsed with solvent as soon as possible after use, and the solvent rinsing shall be added to the composite wastewater sample for extraction and analysis.
2. Daily, Monthly or Quarterly Estimate.
3. Receiving water standard observations are excused if effluent not turbid, discolored, oily, and no floating matter.
4. During wet weather period, take sample during first daylight storm of each calendar quarter.
5. Dosage shall be reported in lbs/day on a daily basis. Chlorine residual after adequate contact and prior to de-chlorination shall be monitored continuously or every 2 hours and reported as a daily grab. Final chlorine residual shall be reported using the attached form "A" or equivalent.
6. Seven day composite sample.

